

THE POLITICAL ECONOMY OF FOSSIL FUEL SUBSIDY PHASE-OUT: AN EMPIRICAL ASSESSMENT

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Overview

The removal of fossil-fuel subsidies is one of the most compelling, yet strenuous climate change policies. While removing fossil-fuel subsidies can induce GHG emissions reductions, increase fiscal space and lead to net benefits to society, their removal can overturn the public opinion tide, making them pervasive and difficult to remove. This study investigates the effect of fossil-fuel subsidy (FFS) removal on executive approval using quasi-experimental evidence and a probabilistic voting model. We contribute to existing literature with the first empirical estimation of the political costs of subsidy removal and a theoretical explanation behind the unexpectedly strong effect on approval rates. Finally, we test our theoretical explanations using survey data for Latin American democracies. Latin America is uniquely well suited for this analysis due to a widespread practice of fossil-fuel subsidies, several reform efforts and the predominance of presidential regimes.

Methods

We provide an innovative method to assess the political costs of FFS removal. By approximating political costs with presidential approval ratings, we construct a quarterly country panel data set to evaluate how changes in consumer subsidies affect approval ratings. Using the synthetic control method (SCM), we identify and estimate the causal effect of rising gasoline prices (as a consequence of subsidy removal) on presidential approval ratings in Latin American democracies. Importantly, we investigate the heterogeneity of the removal policy: gradual in Mexico vs. one-off in Bolivia. We evaluate whether a one-off (quick) subsidy removal leads to disproportionately larger political costs in comparison to gradual (slow) removal. Experimental evidence shows a stronger effect of one-off (quick) changes over gradual changes when the subsidy change is substantial (Offerman and van der Veen, 2015).

The SCM reconstructs a counterfactual outcome using a linear combination of untreated countries with similar outcome trajectories (Abadie and Gardeazabal, 2003). It provides an advantage over other methods, such as difference in differences (DD), as it allows to account for time-varying effects on unobservables (Andersson, 2019). From a carefully chosen control pool of Latin American countries, we construct the counterfactual presidential approval ratings had the reform not been announced/taken place. We do this for two countries separately, Mexico and Bolivia. In December 2009, Mexico implemented a gradual phase-out with monthly gasoline price hikes equivalent to 1% of the price. In stark contrast, Bolivia announced a one-off subsidy removal in December 2010 with a price increase of 70%.

Results

We find evidence of a negative effect of the subsidy phase-out on political approval. In an average year, approval ratings can be 10-30 % lower than in the absence of treatment. However, we also find evidence on the heterogeneity of the removal effect: On average, one-off phase-out leads to 30 % lower, while a gradual phase-out leads to a 20 % lower approval rating. A key question in our setting is: What explains the popularity of fossil-fuel subsidies in a developing country where large shares of the population live below poverty rates and where subsidy removal is progressive? To answer this question, we provide a probabilistic voting model à la Lindbeck and Weibull (1987).

We theoretically show how the distribution of ideological preferences across income groups can lead to a political equilibrium with high fossil-fuel subsidies even if these are regressive. Thereby, we explain why phasing-out subsidies is politically costly and disentangle how politicians cater to ideologically moderate voters. We show that the equilibrium fuel subsidy favors income groups with moderate voters if expected benefits from other uses of government budget translate into lower requests for fuel subsidies. Finally, we test our theoretical predictions in

survey data. We rely on data from LAPOP/AmericasBarometer, which provides voting-age adults public opinion survey data between 2004-2019, from more than 20 countries, and with over 40,000 interviews per round.

Conclusions

The elimination of fossil fuel subsidies brings net benefits to society. However, their prevalence portends a significant political barrier. We provide the first estimation of the political cost of removing them and disentangle why politicians are affected by deviations of the equilibrium subsidy. Our results suggest that gradual removal entails lower political costs compared to one-off changes. These results demonstrate the importance of considering the political economy of climate protection policies throughout their design and implementation.

References

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